

What is claimed is:

1. A wireless information processing system comprising:

5 a wireless information processing apparatus comprising:

a first start signal generator configured to generate a first start signal capable to request a wireless information recording medium having unique identification information to set a command slot;

10 a second start signal generator configured to generate a second start signal capable to request the wireless information recording medium to transmit the identification information;

15 a third start signal generator configured to generate a third start signal capable to request the wireless information recording medium to set a time slot;

20 a transmitter capable to transmit the first to third start signals to the plurality of wireless information recording media located in a communication area; and

25 a receiver capable to receive a response signal including the identification information

transmitted by the wireless information  
recording medium, and  
the wireless information recording medium  
comprising:

5                   an identification information recorder in  
which the identification information is  
recorded;

                  a receiver configured to receive the first  
to third start signals;

10                  a command slot setup unit configured to  
set the command slot;

                  an accumulation unit configured to  
accumulate a number of times that the second  
start signal has been received;

15                  a transmitter configured to transmit the  
response signal at a response time interval  
defined by the time slot when the number of  
times that the second start signal is received  
matches a value of the command slot or when a  
20                  value of the time slot is set; and

                  a time slot setup unit capable to set the  
time slot when the response signal has not  
been appropriately received by the wireless  
information processing apparatus.

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2.       A wireless information processing system

comprising:

a wireless information processing apparatus  
comprising:

5 a first start signal generator configured  
to generate a first start signal capable to  
request a wireless information recording  
medium having unique identification  
information to set a command slot;

10 a second start signal generator  
configured to generate a second start signal  
capable to request the wireless information  
recording medium to transmit the  
identification information;

15 a third start signal generator configured  
to generate a third start signal capable to  
request the wireless information recording  
medium to set a time slot;

20 a transmitter capable to transmit the  
first to third start signals to the plurality of  
wireless information recording media located  
in a communication area; and

25 a receiver capable to receive a response  
signal including the identification information  
transmitted by the wireless information  
recording medium, and

the wireless information recording medium

comprising:

an identification information recorder in which the identification information is recorded;

5 a receiver configured to receive the first to third start signals;

a command slot setup unit configured to set the command slot;

10 an accumulation unit configured to accumulate a number of times that the second start signal has been received;

a time slot setup unit configured to set the time slot; and

15 a transmitter capable to transmit the response signal to the wireless information processing apparatus at a response time interval defined by the time slot when the number of times that the second start signal is received matches a value of the command slot.

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3. A wireless information recording medium comprising:

an identification information recorder in which unique identification information is recorded;

25 a receiver capable to receive a first start signal requesting a setup of a command slot, a second start

signal requesting a transmission of the identification information, and a third start signal requesting a setup of a time slot, the first to third signals being transmitted by a wireless information processing  
5 apparatus;

a command slot setup unit configured to set the command slot;

an accumulation unit configured to accumulate a number of times that the second start signal has been  
10 received;

a transmitter capable to transmit a response signal including the identification information to the wireless information processing apparatus at a response time interval defined by the time slot when the number of  
15 times that the second start signal is received matches a value of the command slot or when the time slot is set; and

a time slot setup unit capable to set the time slot when the response signal has not been appropriately  
20 received by the wireless information processing apparatus.

4. A wireless information recording medium comprising:

25 an identification information recorder in which unique identification information is recorded;

a receiver capable to receive a first start signal requesting a setup of a command slot, a second start signal requesting a transmission of the identification information, and a third start signal requesting a setup  
5 of a time slot, the first to third signals being transmitted by a wireless information processing apparatus;

a command slot setup unit configured to set the command slot;

10 an accumulation unit configured to accumulate a number of times that the second start signal has been received;

a time slot setup unit configured to set the time slot; and

15 a transmitter capable to transmit a response signal including the identification information to the wireless information processing apparatus at a response time interval defined by the time slot when the number of times that the second start signal is received matches a  
20 value of the command slot.

5. The wireless information recording medium of claim 3, wherein the value of the command slot is any one of integers from 0 to N (N is 0 or an arbitrary natural  
25 number), a value of the time slot is any one of integers from 0 to M (M is 0 or an arbitrary natural number),

information on the integer N is added to the first start signal, and information on the integer M is added to the third start signal.

5    6.    The wireless information recording medium of claim 5, wherein the accumulation unit is a command slot subtractor configured to decrement the value of the command slot by one each time the second start signal is received and determines whether the value of the  
10    command slot has reached 0.

7.    The wireless information recording medium of claim 3, wherein the command slot setup unit comprises:  
        a first random number generator configured to  
15    generate a random number; and  
        a command counter configured to employ the random number to set the command slot, and  
        wherein the time slot setup unit comprises:  
        a second random number generator configured to  
20    generate a random number; and  
        a time counter configured to employ the random number to set the time slot.

8.    The wireless information recording medium of claim  
25    3 wherein the command slot setup unit comprises:  
        a random number generator configured to generate

a random number, and

a command counter configured to employ a part of the random number to set the command slot, and

wherein the time slot setup unit comprises a time  
5 counter configured to employ other part of the random number to set the time slot.

9. The wireless information recording medium of claim 3, further comprising a specific information controller  
10 comprising:

a specific information recorder capable to record specific information being effective during a communication period with the wireless information processing apparatus; and

15 a specific information comparator configured to compare the specific information with specific information included in the first to third start signals,

wherein, when the specific information recorded in the specific information recorder matches the specific  
20 information included in the first to third start signals, the command slot setup unit, the accumulation unit and the time slot setup unit execute each request included in the first to third start signals.

25 10. The wireless information recording medium of claim 9, wherein the receiver further receives a fourth



start signal requesting a change in the specific information recorded in the specific information recorder, and

wherein the specific information controller further  
5 comprises a specific information change unit configured to change the specific information recorded in the specific information recorder when the specific information in the specific information recorder matches specific information included in the fourth start signal,  
10 and the identification information matches pre-change identification information included in the fourth start signal.

11. A wireless information processing apparatus  
15 comprising:

a first start signal generator configured to generate a first start signal capable to request a wireless information recording medium having unique identification information to set a command slot;

20 a second start signal generator configured to generate a second start signal capable to request the wireless information recording medium to transmit the identification information;

a third start signal generator configured to  
25 generate a third start signal capable to request the wireless information recording medium to set a time

slot;

a transmitter capable to transmit the first to third start signals to the plurality of wireless information recording media located in a communication area; and

5 a receiver capable to receive a response signal including the identification information transmitted by the wireless information recording medium, in which a number of times that the second start signal has been received matches a value of the command slot, and  
10 capable to receive the response signal transmitted by the wireless information recording medium at a response time interval defined by the time slot.

12. The wireless information processing apparatus of  
15 claim 11, wherein the value of the command slot is any one of integers from 0 to N (N is 0 or an arbitrary natural number), a value of the time slot is any one of integers from 0 to M (M is 0 or an arbitrary natural number), information on the integer N is added to the first start  
20 signal, and information on the integer M is added to the third start signal.

13. The wireless information processing apparatus of claim 11, wherein the first to third start signals include  
25 specific information being effective during a communication period with the wireless information

recording medium.

14. The wireless information processing apparatus of claim 13 further comprising a fourth start signal  
5 generator configured to generate a fourth start signal capable to request the wireless information recording medium to change the specific information included in the wireless information recording medium.

10 15. A communication method for a wireless information processing system comprising:

a wireless information processing apparatus instructing a plurality of wireless information recording media present in a communication area to set command  
15 slots of which values are any one of integers from 0 to N (N is 0 or an arbitrary natural number);

the wireless information recording medium, in which the value of the command slot matches a number of times that a response instruction has been received from  
20 the wireless information processing apparatus, transmitting unique identification information included in the wireless information recording media;

the wireless information processing apparatus instructing the plurality of wireless information  
25 recording media to set time slots of which values are any one of integers from 0 to M (M is 0 or an arbitrary

natural number); and

the wireless information recording medium, of which the identification information transmitted has not been appropriately received by the wireless information  
5 processing apparatus, transmitting the identification information at a response time interval defined by the time slot.

16. A communication method for a wireless information  
10 processing system comprising:

a wireless information processing apparatus transmitting a first start signal requesting a setup of command slots to a plurality of wireless information recording media present in a communication area;

15 the wireless information recording medium, which has received the first start signal, setting the command slot;

the wireless information processing apparatus transmitting a second start signal requesting the  
20 wireless information recording medium to transmit unique identification information included in the wireless information recording medium;

the wireless information recording medium, in which a number of times that the second start signal has  
25 been received matches a value of the command slot, transmitting a response signal including the

identification information;

the wireless information processing apparatus transmitting a third start signal requesting a setup of a time slot;

5 the wireless information recording medium, for which the response signal has not been appropriately received by the wireless information processing apparatus, setting the time slot; and

the wireless information recording medium  
10 transmitting the response signal at a response time interval defined by the time slot.

17. The communication method of claim 16, wherein the value of the command slot is any one of integers from 0 to  
15 N (N is 0 or an arbitrary natural number), a value of the time slot is any one of integers from 0 to M (M is 0 or an arbitrary natural number), information on the integer N is added to the first start signal, and information on the integer M is added to the third start signal.

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18. The communication method of claim 17, wherein the transmission of the response signal including the identification information from the wireless information recording medium in which the number of time that the  
25 second start signal matches the value of the command slot, comprising:

decrementing the value of the command slot each time the second start signal is received; and

transmitting the response signals when the value of the command slots reaches 0.

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19. The communication method of claim 16, wherein the wireless information recording media, for which the response signals have not been appropriately received by the wireless information processing apparatus, are two  
10 or more wireless information recording media having set a same value for the command slots and simultaneously transmitted the response signals.

20. A communication method for a wireless information  
15 processing system comprising:

a wireless information processing apparatus instructing a plurality of wireless information recording media present in a communication area to set command slots to any one of integers from 0 to N (N is 0 or an  
20 arbitrary natural number), and set time slots to any one of integers from 0 to M (M is 0 or an arbitrary natural number);

the wireless information recording medium, in which a value of the command slot matches a number of  
25 times that a response instruction transmitted by the wireless information processing apparatus has been

received, transmitting unique identification information included in the wireless information recording medium at a response time interval defined by the time slots.

5    21.    The communication method of claim 20, further comprising:

          the wireless information processing apparatus transmitting, to the plurality of wireless information recording media present in the communication area, a  
10    first start signal requesting a setup of command slots and a third start signal requesting a setup of time slots;

          the wireless information recording medium which has received the first and third start signals setting the command slot and the time slot;

15           the wireless information processing apparatus transmitting the third start signal and a second start signal requesting a transmission of unique identification information included in the wireless information recording medium; and

20           the wireless information recording medium, in which the number of times that the second start signal has been received matches the value of the command slot, transmitting a response signal including the identification information at a response time interval  
25    defined by the time slot.

22. The communication method of claim 21, wherein the value of the command slot is any one of integers from 0 to N (N is 0 or an arbitrary natural number), a value of the time slot is any one of integers from 0 to M (M is 0 or an arbitrary natural number), information on the integer N is added to the first start signal, and information on the integer M is added to the third start signal.

23. The communication method of claim 22, wherein the transmission of the response signal including the identification information by the wireless information recording medium in which the number of times that the second start signal has been received matches the value of the command slot, at the response interval defined by the time slot, comprising:

decrementing the value of the command slot each time the second start signal is received; and

transmitting the response signal at the response time interval when the value of the command slot reaches 0.

24. The communication method of claim 16, wherein the command slots and the time slots are set by using random numbers, respectively.

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